

Notice of Allowability

Application No.

10/064,960

Examiner

Ljiljana (Lil) V. Ciric

Applicant(s)

YOUN, DAE SUNG

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to reply filed on 16 August 2005 and to telephonic interview on 31 October 2005.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 10312005.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 10312005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other _____

*Proposed drawing amendment,
[mark-up
of Fig. 2]
LVC
10-31-05*

**LJILJANA CIRIC
PRIMARY EXAMINER**

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Charles F. Wieland III, Registration No. 33,096, on October 31, 2005.

2. The application has been amended as follows:

In the specification:

Replace paragraph [0002] with the following:

--The present invention relates to an air-conditioning system for controlling temperature and humidity continuously, which involves control of heating, cooling and humidification, and more particularly involves an air conditioning system using the enthalpy of outside air, which provides for effective and desirable energy savings and management by automatically controlling the amount of air flowing from the outside of a building to the inside and the amount of air discharged from the inside of the building to the outside based on the difference between the enthalpy of outside air and the enthalpy of exhaust air being discharged from the inside of the building to the outside as well as on the amount of carbon dioxide detected inside the building. Thus all of the driving devices in a central main control system are controlled.—

Replace paragraph [0010] with the following:

--In accordance with the present invention, the above and other objects can be accomplished by the provision of an air conditioning system using the enthalpy of outside air, the air conditioning system comprising: a sensing section including an interior temperature sensing part detecting the temperature of the inside of a building by using an interior temperature sensor, an outside air temperature sensing part

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detecting the temperature of air which flows from the outside of the building to the inside by using an outside air temperature sensor, an exhaust air temperature sensing part detecting the temperature of air which discharges from the inside of the building to the outside by using an exhaust air temperature sensor, a humidity sensing part detecting the humidity of the inside and of the outside of the building by using an inside humidity sensor and an outside temperature humidity sensor, a fan RPM sensing part detecting the RPM of an interior ventilation fan, and a carbon dioxide sensing part detecting the concentration of carbon dioxide inside of the building using a carbon dioxide sensor; a control section receiving an input signal from the sensing section, computing the enthalpy of the air which flows from the outside of the building to the inside, and detecting the enthalpy of the air which discharges from the inside of the building to the outside, such that when the difference between the enthalpies is large, there is a significant decrease in the opening rate of an outside air inflow damper or of a discharge damper so that some air flows into the inside of the building or so that some air discharges to the outside of the building, a setting section including a temperature setting part setting the interior temperature of the building and a humidity setting part setting the exterior temperature of the building, the setting section inputting the set key value to the control section, an interior ventilation fan driving section operating the interior ventilation fan using the control of the control section, the outside air inflow damper driving section operating the outside air inflow damper using the control section, a discharge damper driving section operating the inside air discharge damper using the control section, a heater driving section operating a heater, a cooler driving section operating a cooler, and a humidifier driving section operating a humidifier.—

Replace paragraph [0025] with the following:

--Further, the setting section is provided with a heater driving choice key 33 for preventing pipes from being frozen and from bursting, as well as with an odor emitting device driving choice key 34 for generating an odor inside of the building.--

In the claims:

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Claim 1, line 4: Immediately preceding "temperature", insert --the-. Immediately preceding "an interior", insert --using-. Finally, at the end of the line, delete "the" and replace with --an--.

Claim 1, line 5: Immediately preceding "temperature", insert --the-. Also, immediately preceding "air", delete "an".

Claim 1, line 6: Immediately preceding "outside", delete "an". Also, immediately preceding "the outside air", insert --using--.

Claim 1, line 8: Immediately preceding "temperature", insert --the-. Also, immediately preceding "air", delete "an".

Claim 1, line 9: Immediately preceding "outside" at the beginning of the line, insert --the-. Also, immediately preceding "an exhaust air", insert --using--.

Claim 1, line 10: Immediately preceding "humidity", delete "a" and replace with --the-. Also, immediately preceding "a humidity sensor", insert --using--.

Claim 1, line 11: Immediately preceding "RPM", insert --the--.

Claim 1, line 12: Immediately preceding "concentration", delete "a" and replace with --the--.

Claim 1, line 13: Delete "of the inside of the building using" and replace with --inside of the building using a--.

Claim 1, line 14: Delete "sense". Also, delete "sensor" and replace with --sensing--.

Claim 1, line 15: Delete "enthalpy of the air" and replace with --the enthalpy of air--.

Claim 1, line 16: Immediately preceding "air", insert --enthalpy of--.

Claim 1, line 17: Delete "thereby" and replace with --such that--.

Claim 1, line 18: Delete "decreasing largely" and replace with --significantly decreasing--. Also, at the end of the line, immediately preceding "a", insert --of--.

Claim 1, line 19: Delete "a little amount of an" and replace with --some--.

Claim 1, line 20: Delete "a little amount of an" and replace with --some--.

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Claim 1, line 21: Immediately preceding "temperature setting part", insert --a--.

Claim 1, line 23: Immediately preceding "set key", delete "the" and replace with --a--.

Claim 1, line 26: Delete "according to the control of" and replace with --using--.

Claim 1, line 28: Delete "according to the control of" and replace with --using--.

Claim 1, line 30: Delete "according to the control of" and replace with --using--.

Claim 2, line 2: Delete "an heart driving" and replace with --a heater driving--.

Claim 2, lines 2-3: Delete "the pipe from being froze to burst" and replace with --pipes from being frozen and bursting--.

Claim 3, lines 2-3: Delete "the odor in the inside of the building" and replace with --an odor inside the building--.

Claim 4, lines 2-3: Delete "an heater for preventing the pipe from being frozen to burst" and replace with --a heater for preventing pipes from being frozen and bursting--.

Claim 5, lines 2-3: Delete "the odor emitting device for generating the odor in the inside of the building" and replace with --an odor emitting device for generating an odor inside the building--.

Claim 6, lines 2-3: Delete "the main control system so that said air conditioning system is controlled and managed in the central" and replace with --a main control system so that said air conditioning system is centrally controlled and managed--.

Claim 7, lines 2-4: Delete "an amount of CO2 of the inside of the building, and adjusts automatically an amount of the air which flows to the inside and an amount of the air which discharges to the outside according to the detected amount" and replace with --the amount of carbon dioxide inside of the building, and automatically adjusts the amount of air which flows to the inside and the amount of air which discharges to the outside based on the detected amount--.

In the abstract:

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In line 1: Immediately preceding "enthalpy", insert --the-. Also, immediately preceding "outside", delete "the". Finally, delete "controls" and replace with --to--.

In line 2: At the beginning of the line, insert --control-. Immediately preceding "outside", delete "the" and replace with --an-. Also, immediately preceding "inside", delete "the" and replace with --an--.

In line 3: Delete "automatically an" and replace with --the--

In line 4: Immediately preceding "amount", delete "an" and replace with --the-. Also, immediately preceding "air discharging", delete "the".

In line 5: Delete "depending" and replace with --based-. Immediately preceding "enthalpy" [both occurrences], insert --the--.

In line 5: Immediately preceding "discharge air", delete "an" and replace with --the-. Also, immediately preceding "amount", delete "an" and replace with --the-. Finally, immediately preceding "inside", delete "the".

In lines 5-7: Delete the last sentence of the abstract in its entirety.

3. The drawings were received on August 16, 2005. These drawings are hereby disapproved because the line quality is poor and also because an amendment to the drawings is required as noted in greater detail below.

4. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: each of a heater driving choice key and a odor emitting device driving choice key must be shown schematically in setting section 30 in Figure 2 and labeled using reference numbers 33 and 34, respectively, as shown in the attached marked-up copy of Figure 2. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

5. The following is an examiner's statement of reasons for allowance:

The prior art of record does not show nor reasonably suggest an air conditioning system using enthalpy of outside air where the air conditioning system comprises, in combination, a sensing section, a

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control section, a setting section, an interior ventilation fan, outside air and discharge damper driving sections, a heater driving section, a cooler driving section, and humidifier driving section as recited in base claim 1 of the instant application as amended hereby.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner can normally be reached on Mondays through Fridays from 10:00 a.m. to 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene, can be reached at 571-272-4930.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ljiljana (Lil) V. Ciric
Primary Examiner
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Fig. 2

PROPOSED DRAWING
AMENDMENT

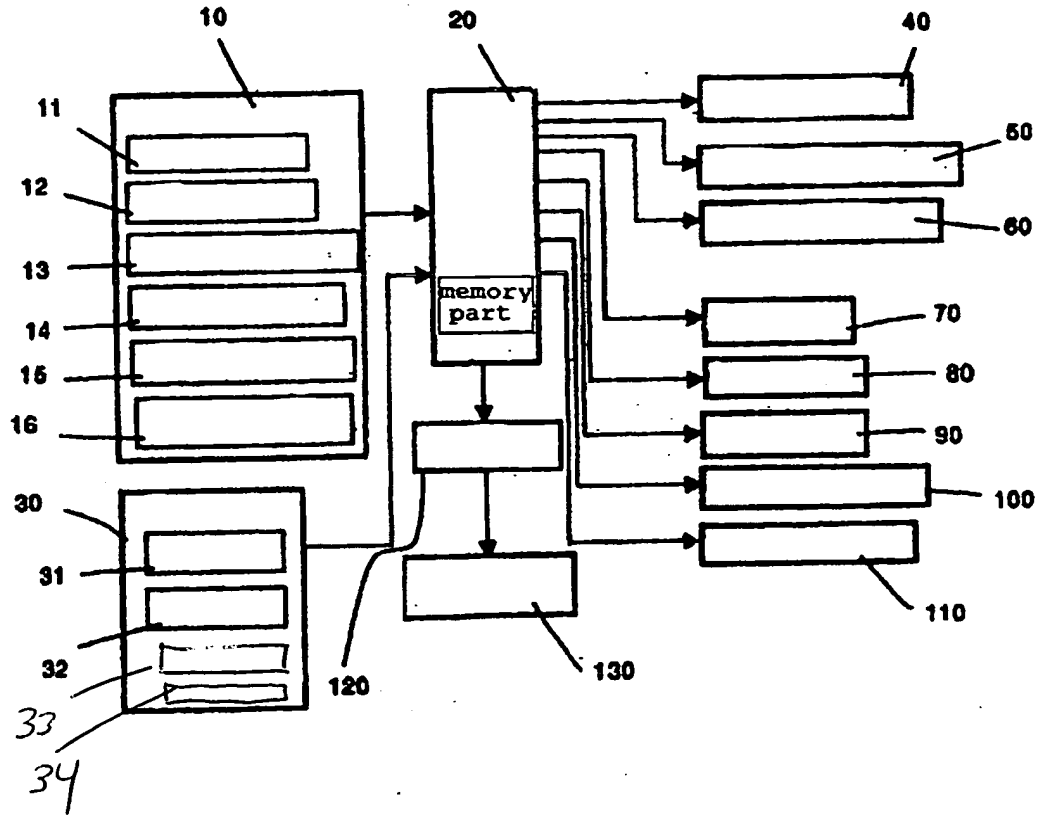




Fig. 1

